

Le Chatelier's Principle

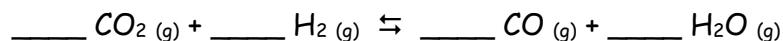
Name: _____ Date: _____

CHEMICAL EQUILIBRIUM REVIEW:

Answer the following problems by showing all of your work:

- For the equilibrium reaction here: $1 \text{H}_2(g) + 1 \text{I}_2(g) \rightleftharpoons 2 \text{HI}(g)$, the concentrations are found to be... $[\text{H}_2] = 0.106 \text{ M}$, $[\text{I}_2] = 0.035 \text{ M}$, and $[\text{HI}] = 1.29 \text{ M}$. What is the equilibrium constant (K)? Which direction of the reaction is favored?

- Calculate the value of the equilibrium constant (K) for the reaction shown below, if 0.1908 moles of CO_2 , 0.0908 moles of H_2 , 0.0092 moles of CO , and 0.0092 moles of H_2O vapor are present in a 2.00 Liter reaction vessel at equilibrium.



LE CHATELIER'S PRINCIPLE:

Complete the following table by writing (*left, right, or none*) for equilibrium shift, and (*decreases, increases, changes, or remains the same*), for the concentrations of reactants and products and for the equilibrium constant (K): $\rightarrow 1 \text{N}_2(g) + 3 \text{H}_2(g) \rightleftharpoons 2 \text{NH}_3(g) + \text{Heat}$

Stress Type	Equilibrium Shift	$[\text{N}_2]$	$[\text{H}_2]$	$[\text{NH}_3]$	Equilibrium Constant (K)
Add N_2	Right	-----	Decreases	Increases	Remains same
Add H_2			-----		
Add NH_3				-----	
Remove N_2		-----			
Remove H_2			-----		
Remove NH_3				-----	
↑ Temperature					
↓ Temperature					
↑ Pressure					
↓ Pressure					